

REMARKS

The Examiner's attention to the present application is noted with appreciation.

New claims have been added that correspond to claims cancelled in October, 2007 prior to the new patent rules taking effect on November 1, 2007. The new claims correspond to cancelled claims as shown in below in Table 1.

Cancelled claim #	New claim #
7	60
12	62
20	63
21	64
22	65
23	66
24	67
33	68
34	69
35	70
36	71
37	72
38	73
43	74
45	75

35 U.S.C. § 112

In Section 4 of the Office Action of September 5, 2008, the Examiner rejected claim 53 under 35 U.S.C. § 112 ¶ 1 as failing to comply with the written description requirement. Claim 53 has been cancelled.

In Section 6 of the Office Action, the Examiner rejected claims 50, 57, and 59 under 35 U.S.C. § 112 ¶ 1 as failing to comply with the written description requirement. Claim 50 has been amended to recite: "The method of claim 1 further comprising removing a surface coating of a barrier layer." (specification, page 12, lines 1-3) Claims 57 and 59 have been cancelled.

In Section 9 of the Office Action, the Examiner rejected claims 49 and 53 under 35 U.S.C. § 112 ¶ 2 as failing to particularly point out and distinctively claim the subject matter which applicant regards as the

invention. Claim 49 has been amended to recite "The method of claim 1 wherein the organic solution comprises less than 0.25% water by volume." Claim 53 has been amended to recite "The method of claim 14 wherein the surface coating of the barrier layer comprises at least one material selected from the group consisting of an oxide and a nitride."

Claim Rejections- 35 U.S.C. § 102

In Section 10 of the Office Action, the Examiner rejected claims 1, 3-5, 9, 10, 13-18, 48-51, 53, 55, 56, and 58 under 35 U.S.C. § 102(a) as being anticipated by the article "Pd-Cu Co-deposition on TiSiN as seeds for electroless plating," by Jingye Li for the reasons given in the previous office action and in view of following comments. Applicant respectfully directs the Examiner's attention to the nature of the Li "article." See attached Declaration, which states:

1. The document "Pd-Cu Co-deposition on TiSiN as seeds for electroless plating," by Jingye Li was only available to members of my research team in closed meetings within the confines of the research laboratory at the University of Missouri.
2. The document is merely a work summary prepared as an internal quarterly report to me.
3. The document was never made available to the public, and therefore was never published.

Therefore this reference is not applicable as prior art under 35 U.S.C. § 102(a). Applicant apologizes for not explaining fully the nature of this unpublished report on the Information Disclosure Statement.

According to the court in *In re Klopfenstein*, 380 F.3d 1345 (Fed. Cir. 2004), a given reference is "publicly accessible" if: "Upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it and recognize and comprehend therefrom the essentials of the claimed invention without need of further research or experimentation." Also, according to the court in *In re George*, 2 USPQ2d 1880 (Bd. Pat. App. & Inter. 1987), research reports disseminated in-house to only those persons who understood the policy of confidentiality regarding such reports are not printed publications even though the policy was not specifically stated in writing.

In Section 12 of the Office Action, the Examiner rejected claims 1, 3-5, 9-11, 14, 18, 19, 27, 39, 42, 44, 48, 50, 51, 53, 55, and 58 under 35 U.S.C. § 102(b) as being anticipated by the article "An Alternative Metallic Seeding Technique for Subsequent Electrochemical Deposition of Copper onto Barrier Metals," by Fang et al. for the reasons given in the previous office action and in view of following comments.

Applicant has amended claim 1 to recite: "A deposition method comprising the steps of: providing a substrate comprising an active substrate comprising at least one material selected from the group consisting of a metal, metal alloy, and metal containing compound; contacting the substrate with a non-aqueous organic solution comprising a desired deposition galvanic coating component, the desired deposition galvanic coating component having a more noble composition than the less noble composition of the active substrate; spontaneously displacing the active substrate with the desired deposition galvanic coating component and creating seed particles disposed on the substrate in a localized range, the seed particles comprising an activating species; and continuing plating the desired deposition galvanic coating component from the non-aqueous organic solution onto the activated substrate and seed sites."

Fang teaches aqueous electrochemical copper deposition after seeding Ti(N) and Ta(N) films with organic solution deposited copper and palladium (see Abstract). Fang teaches depositing a Cu layer using standard electroless or electrolytic deposition from an aqueous solution, not an organic solution (see page 5, last paragraph) after the initial seeding from an organic solution. Applicant in amended claim 1 teaches continuing plating the desired deposition galvanic coating component from the non-aqueous organic solution onto the activated substrate and seed sites. Nowhere does Fang teach continuing plating from a non-aqueous organic solution. Applicant therefore believes that independent claim 1 and all dependent claims are now allowable.

Additionally, Applicant directs the Examiner's attention to page 6, lines 1-2, lines 12-13, and lines 17-18 where Applicant discloses that neither of these articles discusses the particular deposition coating process of the present invention, which uses galvanic coating and a displacement reaction.

Claim Rejections - 35 U.S.C. § 103(a)

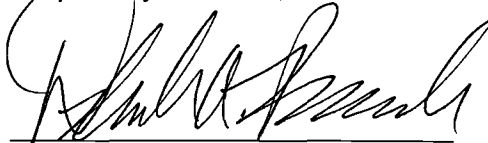
In Section 14 of the Office Action, the Examiner rejected claims 13 and 56 under 35 U.S.C. § 103(a) as being unpatentable over Fang et al. "An Alternative Metallic Seeding Technique for Subsequent Electrochemical Deposition of Copper Onto Barrier Metals." The Examiner asserts that deposition of more than one metal as disclosed by Fang et al. would have been obvious. Applicant has amended claim 1 to more accurately describe the present invention's limitations. Amended claim 1 recites, in part: "continuing plating the desired deposition galvanic coating component from the non-aqueous organic solution onto the activated seed sites." Claim 13 is dependent on claim 1. Nowhere does Fang teach or render obvious continuing plating the desired deposition galvanic coating component from the non-aqueous organic solution. Fang teaches away from plating from an organic solution: Fang teaches continuing plating from a conventional aqueous electrochemical solution. (Abstract) Applicant therefore believes that dependent claim 13 is allowable. Claim 56 has been cancelled.

In Section 16 of the Office Action, the Examiner rejected claim 44 under 35 U.S.C. § 103(a) as being anticipated by the article "Pd-Cu Co-deposition on TiSiN as seeds for electroless plating," by Jingye Li. The Examiner asserts that it would have been obvious to use ambient temperatures or temperatures above ambient. Again, Applicant respectfully directs the Examiner's attention to the Declaration attesting to the nature of the Li "article." This work was never published. Thus, Applicant believes claim 44 is allowable.

In Section 17 of the Office Action, the Examiner rejected claim 54 under 35 U.S.C. § 103(a) as being anticipated by the article "Pd-Cu Co-deposition on TiSiN as seeds for electroless plating," by Jingye Li over the Fang et al. article "An Alternative Metallic Seeding Technique for Subsequent Electrochemical Deposition of Copper Onto Barrier Metals," in view of O'Keefe (US 5,228,903). Claim 54 has been cancelled.

If any issues remain, or if the Examiner believes that prosecution of this application might be expedited by discussion of the issues, the Examiner is cordially invited to telephone the undersigned attorney for Applicant at the telephone number listed below. Please charge any additional fees or credit overpayment to Deposit Account No. 13-4213.

Respectfully submitted,



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